

# Woodward-Clyde

## Consultants



Engineering & sciences applied to the earth & its environment

SFUND RECORDS CTR

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ITX 2166-04634

SFUND RECORDS CTR

2166-04634

93 JAN 11 AM 11:07  
 CALIFORNIA REGIONAL WATER  
 QUALITY CONTROL BOARD  
 LOS ANGELES REGION

January 8, 1993  
 Project No. 904W380C

Mr. Jay Huang  
 California Regional Water Quality Control Board  
 Los Angeles Region  
 101 Centre Plaza Drive  
 Monterey Park, California 91574-2156

**SUBJECT: CLEANING OUT ABANDONED WELL, FORMER WEBER AIRCRAFT  
 FACILITY, BURBANK, CALIFORNIA (FILE NO. 104.1132)**

Dear Mr. Huang:

During the week of January 11-15, 1993, Woodward-Clyde plans to utilize a hollow-stem auger drill-rig to "fish out" debris contained within the abandoned well located immediately north of the former location of Building 206. No activities associated with abandonment of the well will commence without notification to and approval by the Board.

If you have any questions, please call at your earliest convenience.

Very truly yours,

**WOODWARD-CLYDE CONSULTANTS**

Robert L. Traylor  
 Senior Project Scientist

(AZ) H:\Zdon\huang2.ltr

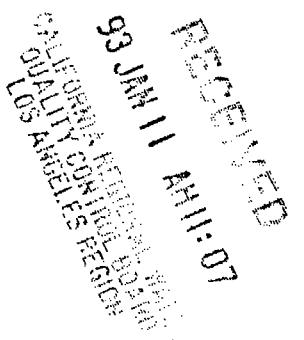


2020 East First Street, Suite 400, Santa Ana, California 92705  
 (714) 835-6886 (213) 581-7164 Fax (714) 667-7147

2166-04634

# Woodward-Clyde Consultants

Engineering & sciences applied to the earth & its environment



January 8, 1993  
Project No. 904W380C

Mr. Jay Huang  
California Regional Water Quality Control Board  
Los Angeles Region  
101 Centre Plaza Drive  
Monterey Park, California 91574-2156

**SUBJECT: SHALLOW EXCAVATION OF SOIL AT TWO POTENTIALLY IMPACTED  
SOIL AREAS, FORMER WEBER AIRCRAFT FACILITY, BURBANK,  
CALIFORNIA (FILE NO. 104.1132)**

Dear Mr. Huang:

Excavation and sampling of soil is planned for two locations at the former Weber Aircraft facility (former facility), during the week of January 11, 1993. Planned excavation at both sites is expected to be shallow (less than 5 feet), and will be in conjunction with grading currently scheduled to begin January 14, 1993.

Following is a description of the two sites, results of soil chemistry analyses, and planned work:

**Former location of Building 207 North Dock**

This area corresponds to the north-central portion of the receiving dock area of Buildings 207 and 208, located approximately 180 feet from the northern property boundary, and approximately 50 feet east of Ontario Street (see attached map). This area contains stained soils, having a slight yellow color, identified during demolition of the former facility.

A soil sample (sample identification YG-1) was collected from the location on November 19, 1992. The sample was collected after removing approximately 6 inches of soil from the ground surface. A trowel was used to place soil into a 12-ounce glass jar. The jar was labeled, placed in a cooler (with ice), and transported under chain-of-custody to the analytical laboratory.

(AZ) H:\zdon\jhuang1.ltr



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**Woodward-Clyde  
Consultants**

Mr. Jay Huang  
California RWQCB  
January 8, 1993  
Page 2

The soil sample was analyzed for halogenated volatile organic compounds, semivolatile organic compounds, California Code of Regulations (CCR) metals, pH, and flashpoint. A copy of the laboratory results are attached. Chromium was identified in this sample at a concentration of 637 milligrams/kilogram (mg/kg). This concentration is more than ten times greater than the chromium STLC value as given in Title 22, Section 66261.24. Other constituents were at concentrations less than 10 times the respective STLC or MCL values.

The areal extent of this area is approximately 1,000 square feet based on visually identifying slight yellow staining in the soil. No soil borings have been drilled in this area, therefore the areal extent and depth of impacted soil is based on visual identification only. Soil in this area is mounded on average 2 feet above grade. Assuming that staining does not extend more than 3 feet below grade, the estimated volume of material is at least 200 cubic yards.

Soil will be excavated to a depth 2 feet below grade, with excavated soil stockpiled on-site. After excavation, the excavation bottom will be sampled to evaluate if impacted soil remains. Further excavation and/or remediation, if required, will be based on the laboratory results of the excavation bottom samples. After excavation, stockpiled soil will be sampled for chromium to evaluate disposition alternatives.

**Building 218 area**

This area is located within the northwest portion of former Building 218 (see attached map).

A surface soil sample (W9-G.S.) was collected of the most heavily stained soil. The soil sample was collected after removing approximately 6 inches of soil from the ground surface. A trowel was used to place soil into a 12-ounce glass jar. The jar was labeled, placed in a cooler (with ice), and transported under chain-of-custody to the analytical laboratory.

The soil sample was analyzed for volatile organic compounds, semivolatile organic compounds, CCR metals, pH, and flashpoint. Analytical results are attached. Chromium was identified in this sample at a concentration of 203 mg/kg. The concentration is more than 10 times greater than the STLC value for chromium. Other



**Woodward-Clyde  
Consultants**

Mr. Jay Huang  
California RWQCB  
January 8, 1993  
Page 3

constituents were at concentrations less than 10 times the respective STLC or MCL values

Discolored soil in this area will be excavated, and the excavated soil will be stockpiled on-site. After excavation, the excavation bottom will be sampled to evaluate if impacted soil remains at this location. Further excavation and/or remediation, if required, will be based on the laboratory results of the excavation bottom samples.

Unless we hear otherwise from you, we will proceed with excavation in these two areas during January 14 and 15.

Very truly yours,

**WOODWARD-CLYDE CONSULTANTS**



Robert L. Traylor  
Senior Project Scientist

Attachments

cc: David Bacharowski



ONTARIO STREET

STREET

ONTARIO

PROPERTY LINE (WEST)

208

207

208 TANK2

METALENCA

C9

C25

208 TANK1

206

FLAGPOLE TANK

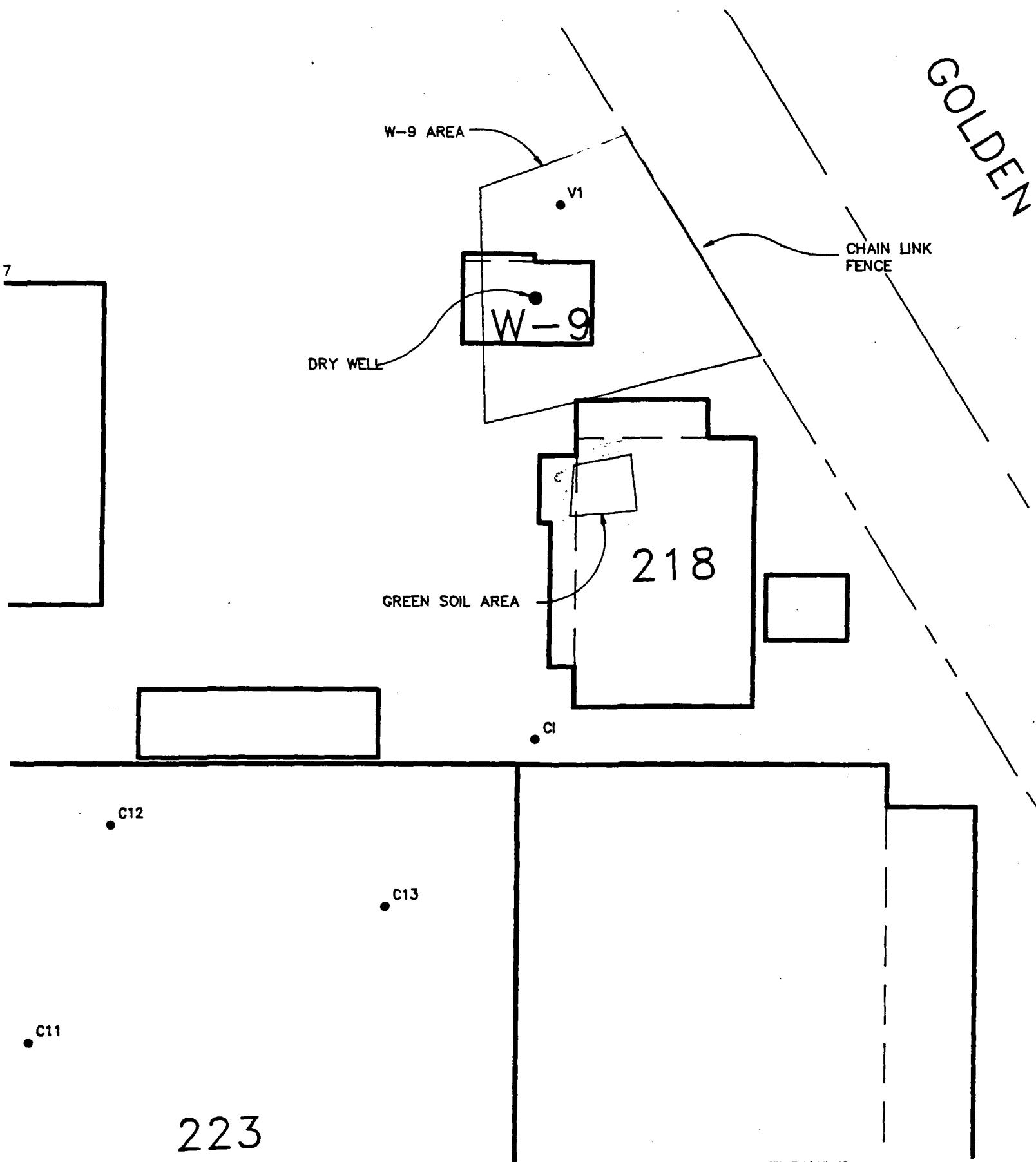
YELLOW SOIL AREA

230 SOIL AREA

230

21

21



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**WCAS****WEST COAST  
ANALYTICAL  
SERVICE, INC.**ANALYTICAL CHEMISTS

---

December 10, 1992

WOODWARD-CLYDE CONSULTANTS  
2020 E. First Street  
Suite 400  
Santa Ana, CA 92705

Attn: Andy Zdon

JOB NO. 22854

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**LABORATORY REPORT**

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**Samples Received: Two (2) Soils in Duplicate****Date Received: 11-19-92****Project No: 904W380C/Weber**

The samples were analyzed as follows:

<u>Samples Analyzed</u>	<u>Analysis</u>	<u>Results</u>
Two (2) soils	pH by EPA 9040	Table 1
Two (2) soils	Flashpoint by EPA 1010	Table 2
Two (2) soils	Halogenated Volatile Organics by EPA 8010	Data Sheets
Two (2) soils	Semi-Volatile Organics by EPA 8270	Data Sheets
Two (2) soils	CAM (17) Metals by ICPMS	Data Sheets

Page 1 of 26

  
Michael Shelton  
Technical Director  
D. J. Northington, Ph.D.  
President

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This report is to be reproduced in its entirety.

WEST COAST ANALYTICAL SERVICE, INC.

WOODWARD-CLYDE CONSULTANTS  
Mr. Andy Zdon

Job # 22854  
December 10, 1992

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LABORATORY REPORT

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Table 1

pH by EPA 9040

<u>Sample ID</u>	<u>pH (units)</u>
GG1	7.1
YG1	8.2

Date Analyzed: 11/20/92

Table 2

<u>Sample ID</u>	<u>Flash Point by EPA 1010</u>
GG1	>180°F
YG1	>180°F

Date Analyzed: 12/3/92

Client:  
WCAS Job #:

WOODWARD-CLYDE  
22854

Sample: YG1

Date Received: 11/19/92  
Date Extracted: 11/24/92  
Date Analyzed: 11/24/92  
Instrument ID: GC #5

Matrix: Soil  
Sample amount: 1.0 g  
Units: ug/kg (ppb)

CAS no.	Compound	Concentration	Detection Limit
75-27-4	Bromodichloromethane	ND	2
75-25-2	Bromoform	ND	3
74-83-9	Bromomethane	ND	5
56-23-5	Carbon tetrachloride	ND	2
108-90-7	Chlorobenzene	ND	1
75-00-3	Chloroethane	ND	5
67-66-3	Chloroform	ND	2
74-87-3	Chloromethane	ND	5
124-48-1	Dibromochloromethane	ND	2
95-50-1	1,2-Dichlorobenzene	ND	1
541-73-1	1,3-Dichlorobenzene	ND	1
106-46-7	1,4-Dichlorobenzene	ND	1
75-34-3	1,1-Dichloroethane	ND	2
107-06-2	1,2-Dichloroethane	ND	2
75-35-4	1,1-Dichloroethylene	ND	3
156-60-5	trans-1,2-Dichloroethylene	ND	2
78-87-5	1,2-Dichloropropane	ND	2
10061-01-5	cis-1,3-Dichloropropene	ND	2
10061-02-6	trans-1,3-Dichloropropene	ND	2
75-09-2	Methylene chloride	6 B	2
79-34-5	1,1,2,2-Tetrachloroethane	ND	2
127-18-4	Tetrachloroethylene	2	2
71-55-6	1,1,1-Trichloroethane	ND	2
79-00-5	1,1,2-Trichloroethane	ND	2
79-01-6	Trichloroethylene	ND	2
75-69-4	Trichlorofluoromethane	ND	2
75-01-4	Vinyl chloride	ND	3

Surrogate	Percent Recovery	Control Limits
Bromofluorobenzene	85	58-138

Client:  
WCAS Job #:

WOODWARD-CLYDE  
22854

Sample: LAB BLANK

Halogenated Volatile Organics by EPA 8010

Date Received: 11/24/92  
Date Extracted: 11/24/92  
Date Analyzed: 11/24/92  
Instrument ID: GC #5

Matrix: Soil  
Sample amount: 1.0 g  
Units: ug/kg (ppb)

CAS no.	Compound	Concentration	Detection Limit
75-27-4	Bromodichloromethane	ND	2
75-25-2	Bromoform	ND	3
74-83-9	Bromomethane	ND	5
56-23-5	Carbon tetrachloride	ND	2
108-90-7	Chlorobenzene	ND	1
75-00-3	Chloroethane	ND	5
67-66-3	Chloroform	ND	2
74-87-3	Chloromethane	ND	5
124-48-1	Dibromochloromethane	ND	2
95-50-1	1,2-Dichlorobenzene	ND	1
541-73-1	1,3-Dichlorobenzene	ND	1
106-46-7	1,4-Dichlorobenzene	ND	1
75-34-3	1,1-Dichloroethane	ND	2
107-06-2	1,2-Dichloroethane	ND	2
75-35-4	1,1-Dichloroethylene	ND	3
156-60-5	trans-1,2-Dichloroethylene	ND	2
78-87-5	1,2-Dichloropropane	ND	2
10061-01-5	cis-1,3-Dichloropropene	ND	2
10061-02-6	trans-1,3-Dichloropropene	ND	2
75-09-2	Methylene chloride	5	2
79-34-5	1,1,2,2-Tetrachloroethane	ND	2
127-18-4	Tetrachloroethylene	ND	2
71-55-6	1,1,1-Trichloroethane	ND	2
79-00-5	1,1,2-Trichloroethane	ND	2
79-01-6	Trichloroethylene	ND	2
75-69-4	Trichlorofluoromethane	ND	2
75-01-4	Vinyl chloride	ND	3

Surrogate	Percent Recovery	Control Limits
Bromofluorobenzene	124	58-138

## WEST COAST ANALYTICAL SERVICE, INC.

WOODWARD-CLYDE CONSULTANTS  
Mr. Andy ZdonJob # 22854  
December 10, 1992

## LABORATORY REPORT

## Halogenated Volatile Organics

## Matrix Spike/Matrix Spike Duplicate Recovery Summary

Sample ID: YG1

Matrix: Soil

Units: ppb

Analyte	Sample Result	Amount Spiked	MS Result	% Rec MS	MSD Result	% Rec MSD	RPD
Chlorobenze	ND	250	230	92	226	90	-2
1,1-DCE	ND	250	143	57	146	58	2
TCE	ND	250	239	96	232	93	-3

## QC Limits

Analyte	RPD		% Recovery			
	Warning	Control	Warning	Control		
Chlorobenzene	16	25	66	127	52	140
1,1-Dichloroethene	24	36	41	141	16	166
Trichloroethylene	22	34	64	123	50	138

Date Extracted: 11/24/92

Date Analyzed: 11/24/92

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: YG1  
WCAS JOB #: 22854

SEMI-VOLATILE ORGANICS (EPA 625/8270)

DATE RECEIVED: 11/19/92 MATRIX: SOIL  
DATE EXTRACTED: 12/04/92 SAMPLE AMOUNT: 50G:1ML  
DATE ANALYZED: 12/05/92 RUN NUMBER: 22854A5  
INSTRUMENT ID: TRIO1000 UNITS: UG/KG (PPB)

CAS #	COMPOUND	CONCENTRATION	DET LIMIT
83-32-9	ACENAPHTHENE	ND	20.
208-96-8	ACENAPHTHYLENE	ND	20.
120-12-7	ANTHRACENE	ND	20.
56-55-3	BENZO(A) ANTHRACENE	ND	20.
205-99-2	BENZO(B & K) FLUORANTHENES	ND	20.
191-24-2	BENZO(G,H,I) PERYLENE	ND	20.
50-32-8	BENZO(A) PYRENE	ND	20.
65-85-0	BENZOIC ACID	ND	100.
100-51-6	BENZYL ALCOHOL	ND	100.
111-91-1	BIS(2-CHLOROETHOXY)METHANE	ND	20.
11-44-1	BIS(2-CHLOROETHYL)ETHER	ND	20.
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	ND	20.
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	100. B	20.
101-55-3	4-BROMOPHENYL PHENYL ETHER	ND	20.
85-68-7	BUTYL BENZYL PHTHALATE	ND	20.
106-47-8	4-CHLOROANILINE	ND	20.
59-50-7	4-CHLORO-3-METHYLPHENOL	ND	20.
91-58-71	2-CHLORONAPHTHALENE	ND	20.
95-57-8	2-CHLOROPHENOL	ND	20.
7005-72-3	4-CHLOROPHENYL PHENYL ETHER	ND	20.
218-01-9	CHRYSENE	ND	20.
53-70-3	DIBENZO(A,H) ANTHRACENE	ND	20.
132-64-9	DIBENZOFURAN	ND	20.
84-74-2	DI-N-BUTYL PHTHALATE	ND	20.
95-50-1	1,2-DICHLOROBENZENE	ND	20.
541-73-1	1,3-DICHLOROBENZENE	ND	20.
106-46-7	1,4-DICHLOROBENZENE	ND	20.
91-94-1	3,3'-DICHLOROBENZIDINE	ND	20.
120-33-2	2,4-DICHLOROPHENOL	ND	20.
84-66-2	DIETHYL PHTHALATE	ND	20.
105-67-9	2,4-DIMETHYLPHENOL	ND	20.
131-11-3	DIMETHYL PHTHALATE	ND	20.
534-52-1	4,6-DINITRO-2-METHYLPHENOL	ND	100.
51-28-5	2,4-DINITROPHENOL	ND	100.
121-14-2	2,4-DINITROTOLUENE	ND	20.
606-20-2	2,6-DINITROTOLUENE	ND	20.
117-84-0	DI-N-OCTYL PHTHALATE	ND	20.
204-44-0	FLUORANTHENE	ND	20.
86-73-7	FLUORENE	ND	20.
118-74-1	HEXACHLOROBENZENE	ND	20.
87-68-3	HEXACHLOROBUTADIENE	ND	20.

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: YG1  
WCAS JOB #: 22854

SEMI-VOLATILE ORGANICS (EPA 625/8270)

DATE RECEIVED: 11/19/92  
DATE EXTRACTED: 12/04/92  
DATE ANALYZED: 12/05/92  
INSTRUMENT ID: TRIO1000

MATRIX: SOIL  
SAMPLE AMOUNT: 50G:1ML  
RUN NUMBER: 22854A5  
UNITS: UG/KG (PPB)

CAS #	COMPOUND	CONCENTRATION	DET LIMIT
77-47-4	HEXACHLOROCYCLOPENTADIENE	ND	20.
67-72-1	HEXACHLOROETHANE	ND	20.
193-39-5	INDENO(1,2,3-CD) PYRENE	ND	20.
78-59-1	ISOPHORONE	ND	20.
91-57-6	2-METHYLNAPHTHALENE	ND	20.
95-48-7	2-METHYLPHENOL	ND	20.
106-44-5	4-METHYLPHENOL	ND	20.
91-20-3	NAPHTHALENE	ND	20.
88-74-4	2-NITROANILINE	ND	100.
99-09-2	3-NITROANILINE	ND	100.
100-01-6	4-NITROANILINE	ND	100.
98-95-3	NITROBENZENE	ND	20.
88-75-5	2-NITROPHENOL	ND	20.
100-02-7	4-NITROPHENOL	ND	100.
86-30-6	N-NITROSODIPHENYLAMINE **	ND	20.
621-64-7	N-NITROSODIPROPYLAMINE	ND	20.
87-86-5	PENTACHLOROPHENOL	ND	100.
85-01-8	PHENANTHRENE	50.	20.
108-95-2	PHENOL	ND	20.
129-00-0	PYRENE	ND	20.
120-82-1	1,2,4-TRICHLOROBENZENE	ND	20.
95-95-4	2,4,5-TRICHLOROPHENOL	ND	100.
88-06-2	2,4,6-TRICHLOROPHENOL	ND	20.

\*\* - Cannot be separated from diphenylamine

SURROGATE	PERCENT RECOVERY	CONTROL LIMIT
PHENOL-d5	85	24-113
2-FLUOROPHENOL	86	25-121
NITROBENZENE-d5	82	23-120
2-FLUOROBIPHENYL	84	30-115
2,4,6-TRIBROMOPHENOL	80	19-122
TERPHENYL-d14	122	18-137

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: YG1  
WCAS JOB #: 22854

TENTATIVELY IDENTIFIED COMPOUNDS

DATE RECEIVED:	11/19/92	MATRIX:	SOIL
DATE EXTRACTED:	12/04/92	SAMPLE AMOUNT:	50G:1ML
DATE ANALYZED:	12/05/92	RUN NUMBER:	22854A5
INSTRUMENT ID:	TRIO1000	UNITS:	UG/KG (PPB)

COMPOUND NAME	FRACTION	APPROXIMATE
		CONCENTRATION
1 C20-C30 HYDROCARBON MATRIX	BNA	10000.

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: YG1  
WCAS JOB #: 22854

SEMI-VOLATILE ORGANICS (EPA 625/8270)

DATE RECEIVED: 11/19/92 MATRIX: SOIL  
DATE EXTRACTED: 11/25/92 SAMPLE AMOUNT: 50G:1ML  
DATE ANALYZED: 12/02/92 RUN NUMBER: 22854A3  
INSTRUMENT ID: TRIO1000 UNITS: UG/KG (PPB)

CAS #	COMPOUND	CONCENTRATION	DET LIMIT
83-32-9	ACENAPHTHENE	ND	20.
208-96-8	ACENAPHTHYLENE	ND	20.
120-12-7	ANTHRACENE	ND	20.
56-55-3	BENZO(A) ANTHRACENE	ND	20.
205-99-2	BENZO(B & K) FLUORANTHENES	ND	20.
191-24-2	BENZO(G, H, I) PERYLENE	ND	20.
50-32-8	BENZO(A) PYRENE	ND	20.
65-85-0	BENZOIC ACID	ND	100.
100-51-6	BENZYL ALCOHOL	ND	100.
111-91-1	BIS(2-CHLOROETHOXY)METHANE	ND	20.
11-44-1	BIS(2-CHLOROETHYL)ETHER	ND	20.
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	ND	20.
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	30.	B 20.
101-55-3	4-BROMOPHENYL PHENYL ETHER	ND	20.
85-68-7	BUTYL BENZYL PHTHALATE	ND	20.
106-47-8	4-CHLOROANILINE	ND	20.
59-50-7	4-CHLORO-3-METHYLPHENOL	ND	20.
91-58-71	2-CHLORONAPHTHALENE	ND	20.
95-57-8	2-CHLOROPHENOL	ND	20.
7005-72-3	4-CHLOROPHENYL PHENYL ETHER	ND	20.
218-01-9	CHRYSENE	ND	20.
53-70-3	DIBENZO(A, H) ANTHRACENE	ND	20.
132-64-9	DIBENZOFURAN	ND	20.
84-74-2	DI-N-BUTYL PHTHALATE	ND	20.
95-50-1	1,2-DICHLOROBENZENE	ND	20.
541-73-1	1,3-DICHLOROBENZENE	ND	20.
106-46-7	1,4-DICHLOROBENZENE	ND	20.
91-94-1	3,3'-DICHLOROBENZIDINE	ND	20.
120-33-2	2,4-DICHLOROPHENOL	ND	20.
84-66-2	DIETHYL PHTHALATE	ND	20.
105-67-9	2,4-DIMETHYLPHENOL	ND	20.
131-11-3	DIMETHYL PHTHALATE	ND	20.
534-52-1	4,6-DINITRO-2-METHYLPHENOL	ND	100.
51-28-5	2,4-DINITROPHENOL	ND	100.
121-14-2	2,4-DINITROTOLUENE	ND	20.
606-20-2	2,6-DINITROTOLUENE	ND	20.
117-84-0	DI-N-OCTYL PHTHALATE	ND	20.
204-44-0	FLUORANTHENE	ND	20.
86-73-7	FLUORENE	ND	20.
118-74-1	HEXACHLOROBENZENE	ND	20.
87-68-3	HEXACHLOROBUTADIENE	ND	20.

CLIENT: WOODWARD-CLYDE CONSULTANTS  
WCAS JOB #: 22854

SAMPLE: YG1

SEMI-VOLATILE ORGANICS (EPA 625/8270)

DATE RECEIVED: 11/19/92  
DATE EXTRACTED: 11/25/92  
DATE ANALYZED: 12/02/92  
INSTRUMENT ID: TRIO1000

MATRIX: SOIL  
SAMPLE AMOUNT: 50G:1ML  
RUN NUMBER: 22854A3  
UNITS: UG/KG (PPB)

CAS #	COMPOUND	CONCENTRATION	DET LIMIT
77-47-4	HEXACHLOROCYCLOPENTADIENE	ND	20.
67-72-1	HEXACHLOROETHANE	ND	20.
193-39-5	INDENO(1,2,3-CD) PYRENE	ND	20.
78-59-1	ISOPHORONE	ND	20.
91-57-6	2-METHYLNAPHTHALENE	ND	20.
95-48-7	2-METHYLPHENOL	ND	20.
106-44-5	4-METHYLPHENOL	ND	20.
91-20-3	NAPHTHALENE	ND	20.
88-74-4	2-NITROANILINE	ND	100.
99-09-2	3-NITROANILINE	ND	100.
100-01-6	4-NITROANILINE	ND	100.
98-95-3	NITROBENZENE	ND	20.
88-75-5	2-NITROPHENOL	ND	20.
100-02-7	4-NITROPHENOL	ND	100.
86-30-6	N-NITROSODIPHENYLAMINE **	ND	20.
621-64-7	N-NITROSODIPROPYLAMINE	ND	20.
87-86-5	PENTACHLOROPHENOL	ND	100.
85-01-8	PHENANTHRENE	ND	20.
108-95-2	PHENOL	ND	20.
129-00-0	PYRENE	ND	20.
120-82-1	1,2,4-TRICHLOROBENZENE	ND	20.
95-95-4	2,4,5-TRICHLOROPHENOL	ND	100.
88-06-2	2,4,6-TRICHLOROPHENOL	ND	20.

\*\* - Cannot be separated from diphenylamine

Tentative compounds were not quantitated due to re-extraction  
of sample on 12/04/92.

SURROGATE	PERCENT RECOVERY	CONTROL LIMIT
PHENOL-d5	59	24-113
2-FLUOROPHENOL	67	25-121
NITROBENZENE-d5	72	23-120
2-FLUOROBIPHENYL	82	30-115
2,4,6-TRIBROMOPHENOL	102	19-122
TERPHENYL-d14	112	18-137

CLIENT: WOODWARD-CLYDE CONSULTANTS  
WCAS JOB #: 22854

SAMPLE: METHOD BLANK

SEMI-VOLATILE ORGANICS (EPA 625/8270)

DATE RECEIVED: 12/04/92  
DATE EXTRACTED: 12/04/92  
DATE ANALYZED: 12/05/92  
INSTRUMENT ID: TRIO1000

MATRIX: SOIL  
SAMPLE AMOUNT: 50G:1ML  
RUN NUMBER: 22854AA1  
UNITS: UG/KG (PPB)

CAS #	COMPOUND	CONCENTRATION	DET LIMIT
83-32-9	ACENAPHTHENE	ND	20.
208-96-8	ACENAPHTHYLENE	ND	20.
120-12-7	ANTHRACENE	ND	20.
56-55-3	BENZO(A) ANTHRACENE	ND	20.
205-99-2	BENZO(B & K) FLUORANTHENES	ND	20.
191-24-2	BENZO(G, H, I) PERYLENE	ND	20.
50-32-8	BENZO(A) PYRENE	ND	20.
65-85-0	BENZOIC ACID	ND	100.
100-51-6	BENZYL ALCOHOL	ND	100.
111-91-1	BIS(2-CHLOROETHOXY)METHANE	ND	20.
11-44-1	BIS(2-CHLOROETHYL)ETHER	ND	20.
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	ND	20.
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	30.	20.
101-55-3	4-BROMOPHENYL PHENYL ETHER	ND	20.
85-68-7	BUTYL BENZYL PHTHALATE	ND	20.
106-47-8	4-CHLOROANILINE	ND	20.
59-50-7	4-CHLORO-3-METHYLPHENOL	ND	20.
91-58-71	2-CHLORONAPHTHALENE	ND	20.
95-57-8	2-CHLOROPHENOL	ND	20.
7005-72-3	4-CHLOROPHENYL PHENYL ETHER	ND	20.
218-01-9	CHRYSENE	ND	20.
53-70-3	DIBENZO(A, H) ANTHRACENE	ND	20.
132-64-9	DIBENZOFURAN	ND	20.
84-74-2	DI-N-BUTYL PHTHALATE	ND	20.
95-50-1	1,2-DICHLOROBENZENE	ND	20.
541-73-1	1,3-DICHLOROBENZENE	ND	20.
106-46-7	1,4-DICHLOROBENZENE	ND	20.
91-94-1	3,3'-DICHLOROBENZIDINE	ND	20.
120-33-2	2,4-DICHLOROPHENOL	ND	20.
84-66-2	DIETHYL PHTHALATE	ND	20.
105-67-9	2,4-DIMETHYLPHENOL	ND	20.
131-11-3	DIMETHYL PHTHALATE	ND	20.
534-52-1	4,6-DINITRO-2-METHYLPHENOL	ND	100.
51-28-5	2,4-DINITROPHENOL	ND	100.
121-14-2	2,4-DINITROTOLUENE	ND	20.
606-20-2	2,6-DINITROTOLUENE	ND	20.
117-84-0	DI-N-OCTYL PHTHALATE	ND	20.
204-44-0	FLUORANTHENE	ND	20.
86-73-7	FLUORENE	ND	20.
118-74-1	HEXACHLOROBENZENE	ND	20.
87-68-3	HEXACHLOROBUTADIENE	ND	20.

Client:  
WCAS Job #:

WOODWARD-CLYDE  
22854

Sample: YG1

Halogenated Volatile Organics by EPA 8010

Date Received: 11/19/92  
Date Extracted: 11/24/92  
Date Analyzed: 11/24/92  
Instrument ID: GC #5

Matrix: Soil  
Sample amount: 1.0 g

Units: ug/kg (ppb)

CAS no.	Compound	Concentration	Detection Limit
75-27-4	Bromodichloromethane	ND	2
75-25-2	Bromoform	ND	3
74-83-9	Bromomethane	ND	5
56-23-5	Carbon tetrachloride	ND	2
108-90-7	Chlorobenzene	ND	1
75-00-3	Chloroethane	ND	5
67-66-3	Chloroform	ND	2
74-87-3	Chloromethane	ND	5
124-48-1	Dibromochloromethane	ND	2
95-50-1	1,2-Dichlorobenzene	ND	1
541-73-1	1,3-Dichlorobenzene	ND	1
106-46-7	1,4-Dichlorobenzene	ND	1
75-34-3	1,1-Dichloroethane	ND	2
107-06-2	1,2-Dichloroethane	ND	2
75-35-4	1,1-Dichloroethylene	ND	3
156-60-5	trans-1,2-Dichloroethylene	ND	2
78-87-5	1,2-Dichloropropane	ND	2
10061-01-5	cis-1,3-Dichloropropene	ND	2
10061-02-6	trans-1,3-Dichloropropene	ND	2
75-09-2	Methylene chloride	6 B	2
79-34-5	1,1,2,2-Tetrachloroethane	ND	2
127-18-4	Tetrachloroethylene	2	2
71-55-6	1,1,1-Trichloroethane	ND	2
79-00-5	1,1,2-Trichloroethane	ND	2
79-01-6	Trichloroethylene	ND	2
75-69-4	Trichlorofluoromethane	ND	2
75-01-4	Vinyl chloride	ND	3

Surrogate	Percent Recovery	Control Limits
Bromofluorobenzene	85	58-138

WOODWARD-CLYDE CONSULTANTS  
Mr. Andy ZdonJob # 22854  
December 10, 1992

## LABORATORY REPORT

## Halogenated Volatile Organics

## Matrix Spike/Matrix Spike Duplicate Recovery Summary

Sample ID: YG1

Matrix: Soil

Units: ppb

Analyte	Sample Result	Amount Spiked	MS Result	% Rec MS	MSD Result	% Rec MSD	RPD
Chlorobenzene	ND	250	230	92	226	90	-2
1,1-DCE	ND	250	143	57	146	58	2
TCE	ND	250	239	96	232	93	-3

## QC Limits

Analyte	RPD		% Recovery			
	Warning	Control	Warning	Control		
Chlorobenzene	16	25	66	127	52	140
1,1-Dichloroethene	24	36	41	141	16	166
Trichloroethylene	22	34	64	123	50	138

Date Extracted: 11/24/92

Date Analyzed: 11/24/92

## SEMI-VOLATILE ORGANICS (EPA 625/8270)

DATE RECEIVED: 11/19/92 MATRIX: SOIL  
DATE EXTRACTED: 12/04/92 SAMPLE AMOUNT: 50G:1ML  
DATE ANALYZED: 12/05/92 RUN NUMBER: 22854A5  
INSTRUMENT ID: TRIO1000 UNITS: UG/KG (PPB)

CAS #	COMPOUND	CONCENTRATION	DET LIMIT
83-32-9	ACENAPHTHENE	ND	20.
208-96-8	ACENAPHTHYLENE	ND	20.
120-12-7	ANTHRACENE	ND	20.
56-55-3	BENZO(A) ANTHRACENE	ND	20.
205-99-2	BENZO(B & K) FLUORANTHENES	ND	20.
191-24-2	BENZO(G, H, I) PERYLENE	ND	20.
50-32-8	BENZO(A) PYRENE	ND	20.
65-85-0	BENZOIC ACID	ND	100.
100-51-6	BENZYL ALCOHOL	ND	100.
111-91-1	BIS(2-CHLOROETHOXY)METHANE	ND	20.
11-44-1	BIS(2-CHLOROETHYL) ETHER	ND	20.
39638-32-9	BIS(2-CHLOROISOPROPYL) ETHER	ND	20.
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	100.	B 20.
101-55-3	4-BROMOPHENYL PHENYL ETHER	ND	20.
85-68-7	BUTYL BENZYL PHTHALATE	ND	20.
106-47-8	4-CHLOROANILINE	ND	20.
59-50-7	4-CHLORO-3-METHYLPHENOL	ND	20.
91-58-71	2-CHLORONAPHTHALENE	ND	20.
95-57-8	2-CHLOROPHENOL	ND	20.
7005-72-3	4-CHLOROPHENYL PHENYL ETHER	ND	20.
218-01-9	CHRYSENE	ND	20.
53-70-3	DIBENZO(A, H) ANTHRACENE	ND	20.
132-64-9	DIBENZOFURAN	ND	20.
84-74-2	DI-N-BUTYL PHTHALATE	ND	20.
95-50-1	1,2-DICHLOROBENZENE	ND	20.
541-73-1	1,3-DICHLOROBENZENE	ND	20.
106-46-7	1,4-DICHLOROBENZENE	ND	20.
91-94-1	3,3'-DICHLOROBENZIDINE	ND	20.
120-33-2	2,4-DICHLOROPHENOL	ND	20.
84-66-2	DIETHYL PHTHALATE	ND	20.
105-67-9	2,4-DIMETHYLPHENOL	ND	20.
131-11-3	DIMETHYL PHTHALATE	ND	20.
534-52-1	4,6-DINITRO-2-METHYLPHENOL	ND	100.
51-28-5	2,4-DINITROPHENOL	ND	100.
121-14-2	2,4-DINITROTOLUENE	ND	20.
606-20-2	2,6-DINITROTOLUENE	ND	20.
117-84-0	DI-N-OCTYL PHTHALATE	ND	20.
204-44-0	FLUORANTHENE	ND	20.
86-73-7	FLUORENE	ND	20.
118-74-1	HEXACHLOROBENZENE	ND	20.
87-68-3	HEXACHLOROBUTADIENE	ND	20.

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: YG1  
WCAS JOB #: 22854

TENTATIVELY IDENTIFIED COMPOUNDS

DATE RECEIVED: 11/19/92  
DATE EXTRACTED: 12/04/92  
DATE ANALYZED: 12/05/92  
INSTRUMENT ID: TRIO1000

MATRIX: SOIL  
SAMPLE AMOUNT: 50G:1ML  
RUN NUMBER: 22854A5  
UNITS: UG/KG (PPB)

COMPOUND NAME	FRACTION	APPROXIMATE CONCENTRATION
1 C20-C30 HYDROCARBON MATRIX	BNA	10000.

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: YG1  
WCAS JOB #: 22854

SEMI-VOLATILE ORGANICS (EPA 625/8270)

DATE RECEIVED: 11/19/92  
DATE EXTRACTED: 11/25/92  
DATE ANALYZED: 12/02/92  
INSTRUMENT ID: TRIO1000

MATRIX: SOIL  
SAMPLE AMOUNT: 50G:1ML  
RUN NUMBER: 22854A3  
UNITS: UG/KG (PPB)

CAS #	COMPOUND	CONCENTRATION	DET LIMIT
77-47-4	HEXACHLOROCYCLOPENTADIENE	ND	20.
67-72-1	HEXACHLOROETHANE	ND	20.
193-39-5	INDENO(1,2,3-CD)PYRENE	ND	20.
78-59-1	ISOPHORONE	ND	20.
91-57-6	2-METHYLNAPHTHALENE	ND	20.
95-48-7	2-METHYLPHENOL	ND	20.
106-44-5	4-METHYLPHENOL	ND	20.
91-20-3	NAPHTHALENE	ND	20.
88-74-4	2-NITROANILINE	ND	100.
99-09-2	3-NITROANILINE	ND	100.
100-01-6	4-NITROANILINE	ND	100.
98-95-3	NITROBENZENE	ND	20.
88-75-5	2-NITROPHENOL	ND	20.
100-02-7	4-NITROPHENOL	ND	100.
86-30-6	N-NITROSODIPHENYLAMINE **	ND	20.
621-64-7	N-NITROSODIPOXYLAMINE	ND	20.
87-86-5	PENTACHLOROPHENOL	ND	100.
85-01-8	PHENANTHRENE	ND	20.
108-95-2	PHENOL	ND	20.
129-00-0	PYRENE	ND	20.
120-82-1	1,2,4-TRICHLOROBENZENE	ND	20.
95-95-4	2,4,5-TRICHLOROPHENOL	ND	100.
88-06-2	2,4,6-TRICHLOROPHENOL	ND	20.

\*\* - Cannot be separated from diphenylamine

Tentative compounds were not quantitated due to re-extraction  
of sample on 12/04/92.

SURROGATE	PERCENT RECOVERY	CONTROL LIMIT
PHENOL-d5	59	24-113
2-FLUOROPHENOL	67	25-121
NITROBENZENE-d5	72	23-120
2-FLUOROBIPHENYL	82	30-115
2,4,6-TRIBROMOPHENOL	102	19-122
TERPHENYL-d14	112	18-137

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: METHOD BLANK  
WCAS JOB #: 22854

SEMI-VOLATILE ORGANICS (EPA 625/8270)

DATE RECEIVED: 12/04/92 MATRIX: SOIL  
DATE EXTRACTED: 12/04/92 SAMPLE AMOUNT: 50G:1ML  
DATE ANALYZED: 12/05/92 RUN NUMBER: 22854AA1  
INSTRUMENT ID: TRIO1000 UNITS: UG/KG (PPB)

CAS #	COMPOUND	CONCENTRATION	DET LIMIT
77-47-4	HEXACHLOROCYCLOPENTADIENE	ND	20.
67-72-1	HEXACHLOROETHANE	ND	20.
193-39-5	INDENO(1,2,3-CD) PYRENE	ND	20.
78-59-1	ISOPHORONE	ND	20.
91-57-6	2-METHYLNAPHTHALENE	ND	20.
95-48-7	2-METHYLPHENOL	ND	20.
106-44-5	4-METHYLPHENOL	ND	20.
91-20-3	NAPHTHALENE	ND	20.
88-74-4	2-NITROANILINE	ND	100.
99-09-2	3-NITROANILINE	ND	100.
100-01-6	4-NITROANILINE	ND	100.
98-95-3	NITROBENZENE	ND	20.
88-75-5	2-NITROPHENOL	ND	20.
100-02-7	4-NITROPHENOL	ND	100.
86-30-6	N-NITROSODIPHENYLAMINE **	ND	20.
621-64-7	N-NITROSODIPOXYLAMINE	ND	20.
87-86-5	PENTACHLOROPHENOL	ND	100.
85-01-8	PHENANTHRENE	ND	20.
108-95-2	PHENOL	ND	20.
129-00-0	PYRENE	ND	20.
120-82-1	1,2,4-TRICHLOROBENZENE	ND	20.
95-95-4	2,4,5-TRICHLOROPHENOL	ND	100.
88-06-2	2,4,6-TRICHLOROPHENOL	ND	20.

\*\* - Cannot be separated from diphenylamine

SURROGATE	PERCENT RECOVERY	CONTROL LIMIT
PHENOL-d5	88	24-113
2-FLUOROPHENOL	81	25-121
NITROBENZENE-d5	92	23-120
2-FLUOROBIPHENYL	96	30-115
2,4,6-TRIBROMOPHENOL	95	19-122
TERPHENYL-d14	132	18-137

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: METHOD BLANK  
WCAS JOB #: 22854

SEMI-VOLATILE ORGANICS (EPA 625/8270)

DATE RECEIVED: 11/25/92  
DATE EXTRACTED: 11/25/92  
DATE ANALYZED: 12/02/92  
INSTRUMENT ID: TRIO1000

MATRIX: SOIL  
SAMPLE AMOUNT: 50G:1ML  
RUN NUMBER: 22854AA1  
UNITS: UG/KG (PPB)

CAS #	COMPOUND	CONCENTRATION	DET LIMIT
83-32-9	ACENAPHTHENE	ND	20.
208-96-8	ACENAPHTHYLENE	ND	20.
120-12-7	ANTHRACENE	ND	20.
56-55-3	BENZO(A) ANTHRACENE	ND	20.
205-99-2	BENZO(B & K) FLUORANTHENES	ND	20.
191-24-2	BENZO(G, H, I) PERYLENE	ND	20.
50-32-8	BENZO(A) PYRENE	ND	20.
65-85-0	BENZOIC ACID	ND	100.
100-51-6	BENZYL ALCOHOL	ND	100.
111-91-1	BIS(2-CHLOROETHOXY) METHANE	ND	20.
11-44-1	BIS(2-CHLOROETHYL) ETHER	ND	20.
39638-32-9	BIS(2-CHLOROISOPROPYL) ETHER	ND	20.
117-81-7	BIS(2-ETHYLHEXYL) PHTHALATE	30.	20.
101-55-3	4-BROMOPHENYL PHENYL ETHER	ND	20.
85-68-7	BUTYL BENZYL PHTHALATE	ND	20.
106-47-8	4-CHLOROANILINE	ND	20.
59-50-7	4-CHLORO-3-METHYLPHENOL	ND	20.
91-58-71	2-CHLORONAPHTHALENE	ND	20.
95-57-8	2-CHLOROPHENOL	ND	20.
7005-72-3	4-CHLOROPHENYL PHENYL ETHER	ND	20.
218-01-9	CHRYSENE	ND	20.
53-70-3	DIBENZO(A, H) ANTHRACENE	ND	20.
132-64-9	DIBENZOFURAN	ND	20.
84-74-2	DI-N-BUTYL PHTHALATE	ND	20.
95-50-1	1,2-DICHLOROBENZENE	ND	20.
541-73-1	1,3-DICHLOROBENZENE	ND	20.
106-46-7	1,4-DICHLOROBENZENE	ND	20.
91-94-1	3,3'-DICHLOROBENZIDINE	ND	20.
120-33-2	2,4-DICHLOROPHENOL	ND	20.
84-66-2	DIETHYL PHTHALATE	ND	20.
105-67-9	2,4-DIMETHYLPHENOL	ND	20.
131-11-3	DIMETHYL PHTHALATE	ND	20.
534-52-1	4,6-DINITRO-2-METHYLPHENOL	ND	100.
51-28-5	2,4-DINITROPHENOL	ND	100.
121-14-2	2,4-DINITROTOLUENE	ND	20.
606-20-2	2,6-DINITROTOLUENE	ND	20.
117-84-0	DI-N-OCTYL PHTHALATE	ND	20.
204-44-0	FLUORANTHENE	ND	20.
86-73-7	FLUORENE	ND	20.
118-74-1	HEXACHLOROBENZENE	ND	20.
87-68-3	HEXACHLOROBUTADIENE	ND	20.

WOODWARD-CLYDE CONSULTANTS  
Mr. Andy ZdonJob # 22854  
December 10, 1992

## LABORATORY REPORT

MATRIX SPIKE (MS AND MSD)  
% RECOVERY AND RPD SUMMARYSAMPLE: YG1  
MATRIX: SOIL  
UNITS : UG/KG (PPB)

## SEMI-VOLATILE COMPOUNDS

COMPOUND	CONC SPIKED	CONC SAMPLE	CONC MS	%REC MS	CONC MSD	%REC MSD	RPD
1,2,4-TRICHLOROBENZENE	1000.	ND	1300.	130**	1280.	128**	2
ACENAPHTHENE	1000.	ND	1310.	131**	1260.	126*	4
2,4-DINITROTOLUENE	1000.	ND	930.	93	857.	86	8
PYRENE	1000.	ND	1560.	156*	1790.	179**	-14
NITROSOPROPYLAMINE	1000.	ND	1200.	120	1140.	114	5
1,4-DICHLOROBENZENE	1000.	ND	1040.	104*	978.	98	6
PENTACHLOROPHENOL	2000.	ND	2500.	125	2250.	113	11
PHENOL	2000.	ND	2300.	115*	2240.	112*	3
2-CHLOROPHENOL	2000.	ND	2270.	114*	2150.	108	5
P-CHLORO-M-CRESOL	2000.	ND	2540.	127*	2480.	124*	2
4-NITROPHENOL	2000.	ND	1370.	69	1270.	64	8

\* - Asterisked Values Are Outside Warning Limits

\*\* - Double Asterisked Values Are Outside Control Limits; data used since samples were non-detected.

## SOIL QUALITY CONTROL LIMITS

	% RECOVERY		RPD	
	WARNING	CONTROL	WARNING	CONTROL
1,2,4-TRICHLOROBENZENE	58-113	44-126	17	25
ACENAPHTHENE	62-114	49-127	17	26
2,4-DINITROTOLUENE	51-115	35-131	19	29
PYRENE	55-144	33-166	25	37
NITROSOPROPYLAMINE	40-120	21-139	20	30
1,4-DICHLOROBENZENE	55-100	44-111	15	23
PENTACHLOROPHENOL	38-159	8-189	23	36
PHENOL	55-104	43-117	18	27
2-CHLOROPHENOL	64-110	52-122	16	24
P-CHLORO-M-CRESOL	56-116	42-131	19	29
4-NITROPHENOL	22-146	0-177	15	24

Date Analyzed: 12/5/92

## WEST COAST ANALYTICAL SERVICE, INC.

WOODWARD-CLYDE CONSULTANTS  
Mr. Andy ZdonJob # 22854  
December 10, 1992

## LABORATORY REPORT

Sample: YG1  
Matrix: SOIL

QC Summary

## Parts Per Million

Sample	Duplicate	RPD %	Spike Conc ppm	Spk Rslt	% Recovery	Detect Limit
Beryllium	0.38	0.38		20	21.5	105.6
Vanadium	23	25		20	47	5
Chromium	637	606	5.0	20	491	0.2
Cobalt	5.65	7.09	22.6	20	23.8	87.2
Nickel	7.6	7.5	1.3	20	26.3	93.8
Copper	12	12.2	1.7	20	29.7	88
Zinc	49.3	54.1	9.3	20	75.4	0.2
Arsenic	3.4	0.8	123.8 **	20	23.4	106.5
Selenium	2	3		200	221	109.3
Molybdenum	0.3	0.17		20	19.8	97.8
Silver	ND<2	ND<2		20	24	120
Cadmium	0.41	ND<0.06		20	25.3	125.5
Antimony	0.16	0.37		20	19.3	95.2
Barium	93.9	105	11.2	20	110	0.2
Mercury	ND<1	ND<1		2	8	400 **
Thallium	0.11	0.11		20	20.8	103.5
Lead	5.49	5.37	2.2	20	25.3	99.4
						0.08

\*\* - RPD and recovery outside control limits.

Date Analyzed: 11/23/92

**WCAS****WEST COAST  
ANALYTICAL  
SERVICE, INC.**

ANALYTICAL CHEMISTS

November 30, 1992

WOODWARD-CLYDE CONSULTANTS  
2020 E. First Street  
Suite 400  
Santa Ana, CA 92705

Attn: Andy Zydon

JOB NO. 22882

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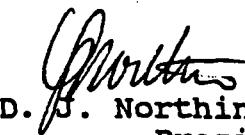
**LABORATORY REPORT**

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**Samples Received: One (1) Soil in Duplicate****Date Received: 11-24-92****Project No: 904W380C/Weber****The sample was analyzed as follows:**

<u>Samples Analyzed</u>	<u>Analysis</u>	<u>Results</u>
One (1) soil	Fuel Hydrocarbons by Modified EPA 8015 (LUFT Manual, April 1989)	Table 1
One (1) soil	Total Petroleum Hydrocarbons by EPA 418.1	Table 2
One (1) soil	pH by EPA 9040	Table 3
One (1) soil	Flash Point by EPA 1010	Table 4
One (1) soil	Volatile Organics by EPA 8260	Data Sheets
One (1) soil	Semi-Volatile Organics by EPA 8270	Data Sheets
One (1) soil	CAM (17) Metals by ICPMS	Data Sheet

Page 1 of 18

  
Michael Shelton  
Technical Director  
D. J. Northington, Ph.D.  
President

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## WEST COAST ANALYTICAL SERVICE, INC.

WOODWARD-CLYDE CONSULTANTS  
Mr. Andy ZydonJob # 22882  
November 30, 1992

## LABORATORY REPORT

Table 1Fuel Hydrocarbons by Modified EPA 8015  
(LUFT Manual, April 1989)Parts Per Million (mg/Kg)

Sample ID	C <sub>5</sub> -C <sub>10</sub> <u>Gasoline</u>	C <sub>7</sub> -C <sub>12</sub> <u>Mineral Spirits</u>	C <sub>7</sub> -C <sub>15</sub> <u>Kerosene</u>	C <sub>10</sub> -C <sub>20</sub> <u>Diesel Fuel</u>	C <sub>20</sub> -C <sub>30</sub> <u>Heavy Hydrocarbons</u>
Method Blank	ND	ND	ND	ND	ND
W9-G.S.	ND	ND	ND	ND	ND
Detection Limit	10	10	10	10	100

Date Analyzed: 11/24/92

## Fuel Hydrocarbons

## Matrix Spike/Matrix Spike Duplicate Recovery Summary

QC Batch #: FH112492

Matrix: Soil

Units: ppm

Analyte	Sample Result	Amount Spiked	MS Result	% Rec MS	MSD Result	% Rec MSD	RPD
Diesel	ND	500	500	100	510	102	2
Gasoline	ND	500	490	98	480	96	-2

## QC Limits

Analyte	RPD		% Recovery	
	Warning	Control	Warning	Control
Diesel Fuel	11	17	76	118
Gasoline	9	14	86	112

Date Extracted: 11/24/92

Date Analyzed: 11/24/92

## WEST COAST ANALYTICAL SERVICE, INC.

WOODWARD-CLYDE CONSULTANTS  
Mr. Andy ZydonJob # 22882  
November 30, 1992

## LABORATORY REPORT

Table 2Total Petroleum Hydrocarbons by EPA 418.1Sample ID      Parts Per Million (mg/kg)

Method Blank	ND
W9-G.S.	440
Detection Limit	10

Date Analyzed: 11/24/92

===== EPA 418.1 TOTAL PETROLEUM HYDROCARBONS =====

Stock Spike Conc.	12.91 ( mg/ml )	Analyte: DIESEL
Spike Volume Used.	90 ( ul )	Date: 11/24/92
Sample Weight.	3.10 ( g )	Matrix: SOIL
Spike Conc. in Sample.	374.8 ( ppm )	Client: WOODWARD CLYDE
Duplicate Weight.	3.10 ( g )	
Spike Conc. in Dup.	374.8 ( ppm )	

=====

JOB #	Sample #	SAMPLE CONC.	M.S. CONC.	PERCENT RECOVERY	M.S.D. CONC.	PERCENT RECOVERY	SPIKE RPD
22882	IR112492	50	390	91	390	91	0

Limits	% Recovery		RPD
-----	-----	-----	---
Analyte	Warning	Control	Warning Control
-----	-----	-----	-----
DIESEL	81-105	75-111	11 15

WEST COAST ANALYTICAL SERVICE, INC.

WOODWARD-CLYDE CONSULTANTS  
Mr. Andy Zydon

Job # 22882  
November 30, 1992

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LABORATORY REPORT

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Table 3

pH by EPA 9040

<u>Sample ID</u>	<u>pH (units)</u>
W9-G.S.	6.4

Date Analyzed: 11/30/92

Table 4

<u>Sample ID</u>	<u>Flash Point by EPA 1010</u>
W9-G.S.	>180°F

Date Analyzed: 11/30/92

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: W9-G.S.  
WCAS JOB #: 22882

VOLATILE ORGANICS BY EPA 624/8260

DATE RECEIVED: 11/24/92  
DATE EXTRACTED: 11/24/92  
DATE ANALYZED: 11/25/92  
INSTRUMENT ID: 4500

MATRIX: SOIL  
SAMPLE AMOUNT: 1.0G  
RUN NUMBER: 22882B1  
UNITS: UG/KG (PPB)

CAS NO.	COMPOUND	CONCENTRATION	DET LIMIT
67-64-1	ACETONE	ND	30.
71-43-2	BENZENE	ND	5.
75-27-4	BROMODICHLOROMETHANE	ND	5.
75-25-2	BROMOFORM	ND	5.
74-83-9	BROMOMETHANE	ND	30.
78-93-3	2-BUTANONE (MEK)	ND	30.
75-15-0	CARBON DISULFIDE	ND	5.
56-23-5	CARBON TETRACHLORIDE	ND	5.
108-90-7	CHLOROBENZENE	ND	5.
75-00-3	CHLOROETHANE	ND	30.
67-66-3	CHLOROFORM	ND	5.
74-87-3	CHLOROMETHANE	ND	30.
108-41-8	CHLORTOLUENE	ND	5.
124-48-1	DIBROMOCHLOROMETHANE	ND	5.
95-50-1	1,2-DICHLOROBENZENE	ND	5.
541-73-1	1,3-DICHLOROBENZENE	ND	5.
106-46-7	1,4-DICHLOROBENZENE	ND	5.
75-34-3	1,1-DICHLOROETHANE	ND	5.
107-06-2	1,2-DICHLOROETHANE	ND	5.
75-35-4	1,1-DICHLOROETHYLENE	ND	5.
156-59-4	CIS-1,2-DICHLOROETHYLENE	ND	5.
156-60-5	TRANS-1,2-DICHLOROETHYLENE	ND	5.
78-87-5	1,2-DICHLOROPROPANE	ND	5.
10061-01-5	CIS-1,3-DICHLOROPROPENE	ND	5.
10061-02-6	TRANS-1,3-DICHLOROPROPENE	ND	5.
100-41-4	ETHYLBENZENE	ND	5.
106-93-4	ETHYLENE DIBROMIDE	ND	5.
76-13-1	FREON-TF	ND	5.
119-78-6	2-HEXANONE	ND	30.
75-09-2	METHYLENE CHLORIDE	10.	B 5.
108-10-1	4-METHYL-2-PENTANONE (MIBK)	ND	30.
100-42-5	STYRENE	ND	5.
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	5.
127-18-4	TETRACHLOROETHYLENE	ND	5.
109-99-9	TETRAHYDROFURAN	ND	30.
108-88-3	TOLUENE	ND	5.
71-55-6	1,1,1-TRICHLOROETHANE	ND	5.
79-00-5	1,1,2-TRICHLOROETHANE	ND	5.
79-01-6	TRICHLOROETHYLENE	ND	5.
75-69-4	TRICHLOROFLUOROMETHANE	ND	5.
108-05-4	VINYL ACETATE	ND	30.
75-01-4	VINYL CHLORIDE	ND	30.
1330-20-7	TOTAL XYLENES	ND	5.
SURROGATE	1,2-DCA-d4	TOL-d8	BFB
PERCENT RECOVERY	100	99	98
CONTROL LIMITS	82-130	81-115	71-119

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: W9-G.S.  
WCAS JOB #: 22882

TENTATIVELY IDENTIFIED COMPOUNDS

DATE RECEIVED: 11/24/92  
DATE EXTRACTED: 11/24/92  
DATE ANALYZED: 11/25/92  
INSTRUMENT ID: 4500

MATRIX: SOIL  
SAMPLE AMOUNT: 1.0G  
RUN NUMBER: 22882B1  
UNITS: UG/KG (PPB)

COMPOUND NAME	FRACTION	APPROXIMATE CONCENTRATION
1 NONE FOUND	VOA	

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: LAB BLANK  
WCAS JOB #: 22882

VOLATILE ORGANICS BY EPA 624/8260

DATE RECEIVED: 11/24/92  
DATE EXTRACTED: 11/24/92  
DATE ANALYZED: 11/25/92  
INSTRUMENT ID: 4500

MATRIX: SOIL  
SAMPLE AMOUNT: 1.0G  
RUN NUMBER: VBLK430  
UNITS: UG/KG (PPB)

CAS NO.	COMPOUND	CONCENTRATION	DET LIMIT
67-64-1	ACETONE	ND	30.
71-43-2	BENZENE	ND	5.
75-27-4	BROMODICHLOROMETHANE	ND	5.
75-25-2	BROMOFORM	ND	5.
74-83-9	BROMOMETHANE	ND	30.
78-93-3	2-BUTANONE (MEK)	ND	30.
75-15-0	CARBON DISULFIDE	ND	5.
56-23-5	CARBON TETRACHLORIDE	ND	5.
108-90-7	CHLOROBENZENE	ND	5.
75-00-3	CHLOROETHANE	ND	30.
67-66-3	CHLOROFORM	ND	5.
74-87-3	CHLOROMETHANE	ND	30.
108-41-8	CHLOROTOLUENE	ND	5.
124-48-1	DIBROMOCHLOROMETHANE	ND	5.
95-50-1	1,2-DICHLOROBENZENE	ND	5.
541-73-1	1,3-DICHLOROBENZENE	ND	5.
106-46-7	1,4-DICHLOROBENZENE	ND	5.
75-34-3	1,1-DICHLOROETHANE	ND	5.
107-06-2	1,2-DICHLOROETHANE	ND	5.
75-35-4	1,1-DICHLOROETHYLENE	ND	5.
156-59-4	CIS-1,2-DICHLOROETHYLENE	ND	5.
156-60-5	TRANS-1,2-DICHLOROETHYLENE	ND	5.
78-87-5	1,2-DICHLOROPROPANE	ND	5.
10061-01-5	CIS-1,3-DICHLOROPROPENE	ND	5.
10061-02-6	TRANS-1,3-DICHLOROPROPENE	ND	5.
100-41-4	ETHYLBENZENE	ND	5.
106-93-4	ETHYLENE DIBROMIDE	ND	5.
76-13-1	FREON-TF	ND	5.
119-78-6	2-HEXANONE	ND	30.
75-09-2	METHYLENE CHLORIDE	8.	5.
108-10-1	4-METHYL-2-PENTANONE (MIBK)	ND	30.
100-42-5	STYRENE	ND	5.
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	5.
127-18-4	TETRACHLOROETHYLENE	ND	5.
109-99-9	TETRAHYDROFURAN	ND	30.
108-88-3	TOLUENE	ND	5.
71-55-6	1,1,1-TRICHLOROETHANE	ND	5.
79-00-5	1,1,2-TRICHLOROETHANE	ND	5.
79-01-6	TRICHLOROETHYLENE	ND	5.
75-69-4	TRICHLOROFLUOROMETHANE	ND	5.
108-05-4	VINYL ACETATE	ND	30.
75-01-4	VINYL CHLORIDE	ND	30.
1330-20-7	TOTAL XYLENES	ND	5.
SURROGATE	1,2-DCA-d4	TOL-d8	BFB
PERCENT RECOVERY	100	99	96
CONTROL LIMITS	86-121	84-115	83-112

CLIENT: WOODWARD-CLYDE CONSULTANTS      SAMPLE: LAB BLANK  
WCAS JOB #: 22882

TENTATIVELY IDENTIFIED COMPOUNDS

DATE RECEIVED: 11/24/92      MATRIX: SOIL  
DATE EXTRACTED: 11/24/92      SAMPLE AMOUNT: 1.0G  
DATE ANALYZED: 11/25/92      RUN NUMBER: VBLK430  
INSTRUMENT ID: 4500      UNITS: UG/KG (PPB)

COMPOUND NAME	FRACTION	APPROXIMATE CONCENTRATION
1 NONE FOUND	VOA	

## WEST COAST ANALYTICAL SERVICE, INC.

WOODWARD-CLYDE CONSULTANTS  
Mr. Andy ZydonJob # 22882  
November 30, 1992

## LABORATORY REPORT

MATRIX SPIKE/MATRIX SPIKE DUPLICATE  
PERCENT RECOVERY AND RPD SUMMARY

QC BATCH: 111992S

MATRIX: SOIL

UNITS: UG/KG (PPB)

## VOLATILE COMPOUNDS

COMPOUND	CONC SPIKED	CONC SAMPLE	CONC MS	% REC MS	CONC MSD	% REC MSD	RPD
1,1-DICHLOROETHYLENE	250.	ND	228.	91	206.	82	10
TRICHLOROETHYLENE	250.	ND	237.	95	225.	90	5
CHLOROBENZENE	250.	ND	254.	102	237.	95	7
TOLUENE	250.	ND	261.	104	241.	96	8
BENZENE	250.	ND	252.	101	228.	91	10

## SOIL QUALITY CONTROL LIMITS

ANALYTE	% RECOVERY		RPD	
	WARNING	CONTROL	WARNING	CONTROL
1,1-DICHLOROETHYLENE	51-155	25-182	14	20
TRICHLOROETHYLENE	59-120	44-135	11	17
CHLOROBENZENE	82-109	75-115	8	12
TOLUENE	80-116	71-125	12	18
BENZENE	73-125	60-138	10	14

Date Analyzed: 11/19/92

CLIENT: WOODWARD-CLYDE CONSULTANTS  
WCAS JOB #: 22882

SAMPLE: W9-G.S.

SEMI-VOLATILE ORGANICS (EPA 625/8270)

DATE RECEIVED: 11/24/92  
DATE EXTRACTED: 11/24/92  
DATE ANALYZED: 11/25/92  
INSTRUMENT ID: TRIO1000

MATRIX: SOIL  
SAMPLE AMOUNT: 50G:1ML  
RUN NUMBER: 22882A2  
UNITS: UG/KG (PPB)

CAS #	COMPOUND	CONCENTRATION	DET LIMIT
83-32-9	ACENAPHTHENE	ND	20.
208-96-8	ACENAPHTHYLENE	ND	20.
120-12-7	ANTHRACENE	ND	20.
56-55-3	BENZO (A) ANTHRACENE	ND	20.
205-99-2	BENZO (B & K) FLUORANTHENES	ND	20.
191-24-2	BENZO (G, H, I) PERYLENE	ND	20.
50-32-8	BENZO (A) PYRENE	ND	20.
65-85-0	BENZOIC ACID	ND	100.
100-51-6	BENZYL ALCOHOL	ND	100.
111-91-1	BIS (2-CHLOROETHOXY) METHANE	ND	20.
11-44-1	BIS (2-CHLOROETHYL) ETHER	ND	20.
39638-32-9	BIS (2-CHLOROISOPROPYL) ETHER	ND	20.
117-81-7	BIS (2-ETHYLHEXYL) PHTHALATE	70.	20.
101-55-3	4-BROMOPHENYL PHENYL ETHER	ND	20.
85-68-7	BUTYL BENZYL PHTHALATE	ND	20.
106-47-8	4-CHLOROANILINE	ND	20.
59-50-7	4-CHLORO-3-METHYLPHENOL	ND	20.
91-58-71	2-CHLORONAPHTHALENE	ND	20.
95-57-8	2-CHLOROPHENOL	ND	20.
7005-72-3	4-CHLOROPHENYL PHENYL ETHER	ND	20.
218-01-9	CHRYSENE	ND	20.
53-70-3	DIBENZO (A, H) ANTHRACENE	ND	20.
132-64-9	DIBENZOFURAN	ND	20.
84-74-2	DI-N-BUTYL PHTHALATE	ND	20.
95-50-1	1,2-DICHLOROBENZENE	ND	20.
541-73-1	1,3-DICHLOROBENZENE	ND	20.
106-46-7	1,4-DICHLOROBENZENE	ND	20.
91-94-1	3,3'-DICHLOROBENZIDINE	ND	20.
120-33-2	2,4-DICHLOROPHENOL	ND	20.
84-66-2	DIETHYL PHTHALATE	ND	20.
105-67-9	2,4-DIMETHYLPHENOL	ND	20.
131-11-3	DIMETHYL PHTHALATE	ND	20.
534-52-1	4,6-DINITRO-2-METHYLPHENOL	ND	100.
51-28-5	2,4-DINITROPHENOL	ND	100.
121-14-2	2,4-DINITROTOLUENE	ND	20.
606-20-2	2,6-DINITROTOLUENE	ND	20.
117-84-0	DI-N-OCTYL PHTHALATE	ND	20.
204-44-0	FLUORANTHENE	ND	20.
86-73-7	FLUORENE	ND	20.
118-74-1	HEXACHLOROBENZENE	ND	20.
87-68-3	HEXACHLOROBUTADIENE	ND	20.

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: W9-G.S.  
WCAS JOB #: 22882

SEMI-VOLATILE ORGANICS (EPA 625/8270)

DATE RECEIVED: 11/24/92 MATRIX: SOIL  
DATE EXTRACTED: 11/24/92 SAMPLE AMOUNT: 50G:1ML  
DATE ANALYZED: 11/25/92 RUN NUMBER: 22882A2  
INSTRUMENT ID: TRIO1000 UNITS: UG/KG (PPB)

CAS #	COMPOUND	CONCENTRATION	DET LIMIT
77-47-4	HEXACHLOROCYCLOPENTADIENE	ND	20.
67-72-1	HEXACHLOROETHANE	ND	20.
193-39-5	INDENO(1,2,3-CD)PYRENE	ND	20.
78-59-1	ISOPHORONE	ND	20.
91-57-6	2-METHYLNAPHTHALENE	ND	20.
95-48-7	2-METHYLPHENOL	ND	20.
106-44-5	4-METHYLPHENOL	ND	20.
91-20-3	NAPHTHALENE	ND	20.
88-74-4	2-NITROANILINE	ND	100.
99-09-2	3-NITROANILINE	ND	100.
100-01-6	4-NITROANILINE	ND	100.
98-95-3	NITROBENZENE	ND	20.
88-75-5	2-NITROPHENOL	ND	20.
100-02-7	4-NITROPHENOL	ND	100.
86-30-6	N-NITROSODIPHENYLAMINE **	ND	20.
621-64-7	N-NITROSODIPROPYLAMINE	ND	20.
87-86-5	PENTACHLOROPHENOL	ND	100.
85-01-8	PHENANTHRENE	ND	20.
108-95-2	PHENOL	ND	20.
129-00-0	PYRENE	ND	20.
120-82-1	1, 2, 4-TRICHLOROBENZENE	ND	20.
95-95-4	2, 4, 5-TRICHLOROPHENOL	ND	100.
88-06-2	2, 4, 6-TRICHLOROPHENOL	ND	20.

\*\* - Cannot be separated from diphenylamine

SURROGATE	PERCENT RECOVERY	CONTROL LIMIT
PHENOL-d5	71	24-113
2-FLUOROPHENOL	68	25-121
NITROBENZENE-d5	88	23-120
2-FLUOROBIPHENYL	98	30-115
2, 4, 6-TRIBROMOPHENOL	107	19-122
TERPHENYL-d14	113	18-137

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: W9-G.S.  
WCAS JOB #: 22882

TENTATIVELY IDENTIFIED COMPOUNDS

DATE RECEIVED:	11/24/92	MATRIX:	SOIL
DATE EXTRACTED:	11/24/92	SAMPLE AMOUNT:	50G:1ML
DATE ANALYZED:	11/25/92	RUN NUMBER:	22882A2
INSTRUMENT ID:	TRIO1000	UNITS:	UG/KG (PPB)

COMPOUND NAME	FRACTION	APPROXIMATE
		CONCENTRATION
1 C20-C34 HYDROCARBON MATRIX	BNA	50000.

CLIENT: WOODWARD-CLYDE CONSULTANTS  
WCAS JOB #: 22882

SAMPLE: METHOD BLANK

SEMI-VOLATILE ORGANICS (EPA 625/8270)

DATE RECEIVED: 11/24/92  
DATE EXTRACTED: 11/24/92  
DATE ANALYZED: 11/25/92  
INSTRUMENT ID: TRIO1000

MATRIX: SOIL  
SAMPLE AMOUNT: 50G:1ML  
RUN NUMBER: 22882AA1  
UNITS: UG/KG (PPB)

CAS #	COMPOUND	CONCENTRATION	DET LIMIT
83-32-9	ACENAPHTHENE	ND	20.
208-96-8	ACENAPHTHYLENE	ND	20.
120-12-7	ANTHRACENE	ND	20.
56-55-3	BENZO(A) ANTHRACENE	ND	20.
205-99-2	BENZO(B & K) FLUORANTHENES	ND	20.
191-24-2	BENZO(G, H, I) PERYLENE	ND	20.
50-32-8	BENZO(A) PYRENE	ND	20.
65-85-0	BENZOIC ACID	ND	100.
100-51-6	BENZYL ALCOHOL	ND	100.
111-91-1	BIS(2-CHLOROETHOXY)METHANE	ND	20.
11-44-1	BIS(2-CHLOROETHYL)ETHER	ND	20.
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	ND	20.
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	ND	20.
101-55-3	4-BROMOPHENYL PHENYL ETHER	ND	20.
85-68-7	BUTYL BENZYL PHTHALATE	ND	20.
106-47-8	4-CHLOROANILINE	ND	20.
59-50-7	4-CHLORO-3-METHYLPHENOL	ND	20.
91-58-71	2-CHLORONAPHTHALENE	ND	20.
95-57-8	2-CHLOROPHENOL	ND	20.
7005-72-3	4-CHLOROPHENYL PHENYL ETHER	ND	20.
218-01-9	CHRYSENE	ND	20.
53-70-3	DIBENZO(A, H) ANTHRACENE	ND	20.
132-64-9	DIBENZOFURAN	ND	20.
84-74-2	DI-N-BUTYL PHTHALATE	ND	20.
95-50-1	1,2-DICHLOROBENZENE	ND	20.
541-73-1	1,3-DICHLOROBENZENE	ND	20.
106-46-7	1,4-DICHLOROBENZENE	ND	20.
91-94-1	3,3'-DICHLOROBENZIDINE	ND	20.
120-33-2	2,4-DICHLOROPHENOL	ND	20.
84-66-2	DIETHYL PHTHALATE	ND	20.
105-67-9	2,4-DIMETHYLPHENOL	ND	20.
131-11-3	DIMETHYL PHTHALATE	ND	20.
534-52-1	4,6-DINITRO-2-METHYLPHENOL	ND	100.
51-28-5	2,4-DINITROPHENOL	ND	100.
121-14-2	2,4-DINITROTOLUENE	ND	20.
606-20-2	2,6-DINITROTOLUENE	ND	20.
117-84-0	DI-N-OCTYL PHTHALATE	ND	20.
204-44-0	FLUORANTHENE	ND	20.
86-73-7	FLUORENE	ND	20.
118-74-1	HEXACHLOROBENZENE	ND	20.
87-68-3	HEXACHLOROBUTADIENE	ND	20.

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: METHOD BLANK  
WCAS JOB #: 22882

SEMI-VOLATILE ORGANICS (EPA 625/8270)

DATE RECEIVED: 11/24/92 MATRIX: SOIL  
DATE EXTRACTED: 11/24/92 SAMPLE AMOUNT: 50G:1ML  
DATE ANALYZED: 11/25/92 RUN NUMBER: 22882AA1  
INSTRUMENT ID: TRIO1000 UNITS: UG/KG (PPB)

CAS #	COMPOUND	CONCENTRATION	DET LIMIT
77-47-4	HEXACHLOROCYCLOPENTADIENE	ND	20.
67-72-1	HEXACHLOROETHANE	ND	20.
193-39-5	INDENO(1,2,3-CD) PYRENE	ND	20.
78-59-1	ISOPHORONE	ND	20.
91-57-6	2-METHYLNAPHTHALENE	ND	20.
95-48-7	2-METHYLPHENOL	ND	20.
106-44-5	4-METHYLPHENOL	ND	20.
91-20-3	NAPHTHALENE	ND	20.
88-74-4	2-NITROANILINE	ND	100.
99-09-2	3-NITROANILINE	ND	100.
100-01-6	4-NITROANILINE	ND	100.
98-95-3	NITROBENZENE	ND	20.
88-75-5	2-NITROPHENOL	ND	20.
100-02-7	4-NITROPHENOL	ND	100.
86-30-6	N-NITROSODIPHENYLAMINE **	ND	20.
621-64-7	N-NITROSODIPROPYLAMINE	ND	20.
87-86-5	PENTACHLOROPHENOL	ND	100.
85-01-8	PHENANTHRENE	ND	20.
108-95-2	PHENOL	ND	20.
129-00-0	PYRENE	ND	20.
120-82-1	1,2,4-TRICHLOROBENZENE	ND	20.
95-95-4	2,4,5-TRICHLOROPHENOL	ND	100.
88-06-2	2,4,6-TRICHLOROPHENOL	ND	20.

\*\* - Cannot be separated from diphenylamine

SURROGATE	PERCENT RECOVERY	CONTROL LIMIT
PHENOL-d5	77	24-113
2-FLUOROPHENOL	81	25-121
NITROBENZENE-d5	85	23-120
2-FLUOROBIPHENYL	95	30-115
2,4,6-TRIBROMOPHENOL	105	19-122
TERPHENYL-d14	109	18-137

CLIENT: WOODWARD-CLYDE CONSULTANTS SAMPLE: METHOD BLANK  
WCAS JOB #: 22882

TENTATIVELY IDENTIFIED COMPOUNDS

DATE RECEIVED: 11/24/92  
DATE EXTRACTED: 11/24/92  
DATE ANALYZED: 11/25/92  
INSTRUMENT ID: TRIO1000

MATRIX: SOIL  
SAMPLE AMOUNT: 50G:1ML  
RUN NUMBER: 22882AA1  
UNITS: UG/KG (PPB)

COMPOUND NAME	FRACTION	APPROXIMATE CONCENTRATION
1 NONE FOUND	BNA	

## WEST COAST ANALYTICAL SERVICE, INC.

WOODWARD-CLYDE CONSULTANTS  
Mr. Andy ZydronJob # 22882  
November 30, 1992

## LABORATORY REPORT

MATRIX SPIKE (MS AND MSD)  
% RECOVERY AND RPD SUMMARYQC BATCH #: 111692S  
MATRIX : SOIL  
UNITS : UG/KG (PPB)

## SEMI-VOLATILE COMPOUNDS

COMPOUND	CONC SPIKED	CONC SAMPLE	CONC MS	%REC MS	CONC MSD	%REC MSD	RPD
1,2,4-TRICHLOROBENZE	2083.	ND	2800.	134**	2720.	131**	3
ACENAPHTHENE	2083.	ND	2500.	120*	2430.	117*	3
2,4-DINITROTOLUENE	2083.	ND	2030.	97	2020.	97	0
PYRENE	2083.	52.	2650.	125	2670.	126	-1
NITROSOPROPYLAMINE	2083.	ND	2130.	102	2030.	97	5
1,4-DICHLOROBENZENE	2083.	ND	2130.	102*	2060.	99	3
PENTACHLOROPHENOL	4167.	ND	4930.	118	4610.	111	7
PHENOL	4167.	ND	4670.	112*	4590.	110*	2
2-CHLOROPHENOL	4167.	ND	4360.	105	4200.	101	4
P-CHLORO-M-CRESOL	4167.	ND	4970.	119*	4900.	118*	1
4-NITROPHENOL	4167.	ND	3120.	75	2870.	69	8

\* - Asterisked Values Are Outside Warning Limits

\*\* - Double Asterisked Values Are Outside Control Limits

## SOIL QUALITY CONTROL LIMITS

	% RECOVERY		RPD	
	WARNING	CONTROL	WARNING	CONTROL
1,2,4-TRICHLOROBENZENE	58-113	44-126	17	25
ACENAPHTHENE	62-114	49-127	17	26
2,4-DINITROTOLUENE	51-115	35-131	19	29
PYRENE	55-144	33-166	25	37
NITROSOPROPYLAMINE	40-120	21-139	20	30
1,4-DICHLOROBENZENE	55-100	44-111	15	23
PENTACHLOROPHENOL	38-159	8-189	23	36
PHENOL	55-104	43-117	18	27
2-CHLOROPHENOL	64-110	52-122	16	24
P-CHLORO-M-CRESOL	56-116	42-131	19	29
4-NITROPHENOL	22-146	0-177	15	24

Date Analyzed: 11/17/92

## WEST COAST ANALYTICAL SERVICE, INC.

WOODWARD-CLYDE CONSULTANTS  
Mr. Andy ZydonJob # 22882  
November 30, 1992

## LABORATORY REPORT

Sample: W9-G.S.

C.A.M. Metals  
 Quantitative Analysis Report  
 Inductively Coupled Plasma-Mass Spectrometry  
 Total Metals Concentration---Parts Per Million  
 \*\*\*\* Exceeds TTLC limits \* May exceed STLC limits

	Sample	Detection Limit	10X STLC Limits mg/Kg	TTLC Limits mg/Kg
Antimony	0.18	0.02	150	500
Arsenic	ND<0.9	0.9	50	500
Barium	54.1	0.3	1000	10000
Beryllium	0.13	0.03	7.5	75
Cadmium	0.2	0.07	10	100
Chromium (III/VI)	203 *	0.4	5600/50	2500/500
Cobalt	3.96	0.02	800	8000
Copper	11.4	0.04	250	2500
Lead	7.84	0.02	50	1000
Mercury	ND<0.4	0.4	2	20
Molybdenum	ND<0.2	0.2	3500	3500
Nickel	4.9	0.2	200	2000
Selenium	ND<2	2	10	100
Silver	ND<0.2	0.2	50	500
Thallium	0.06	0.02	70	700
Vanadium	21	4	240	2400
Zinc	53.6	0.09	2500	5000

- (1) Chromium reported above as total chromium in sample.  
 (2) 10X STLC Limits used as comparison takes into account dilution of the sample by 1/10 during leachate preparation.

Date Analyzed: 11/25/92

Page 17 of 18

## WEST COAST ANALYTICAL SERVICE, INC.

WOODWARD-CLYDE CONSULTANTS  
Mr. Andy ZydonJob # 22882  
November 30, 1992

## LABORATORY REPORT

SAMPLE: W9-G.S.  
Matrix: SOIL

QC Summary

Sample	Parts Per Million			Spk Rslt	% Recovery	Detect. Limit
	Duplicate	RPD %	Spike Conc ppm			
Beryllium	0.13	0.1		20	24.5	121.9
Vanadium	21	26		20	42	4
Chromium	203	202	0.5	20	255	0.4
Cobalt	3.96	3.61	9.2	20	27.4	118.1
Nickel	4.9	4.6	6.3	20	28.1	116.8
Copper	11.4	9.89	14.2	20	35.6	124.8
Zinc	53.6	47.1	12.9	20	75.6	0.09
Arsenic	ND<0.9	1.3		20	19	91.8
Selenium	ND<2	ND<2		200	237	118.5
Molybdenum	ND<0.2	ND<0.2		20	19.4	97
Silver	ND<0.2	ND<0.2		20	26.2	131
Cadmium	0.2	0.29		20	23.7	117.3
Antimony	0.18	0.2		20	19.9	98.6
Barium	54.1	57.3	5.7	20	80	0.3
Mercury	ND<0.4	ND<0.4		2	6.3	315 ** 0.4
Thallium	0.06	0.06		20	20.5	102.2
Lead	7.84	8.02	2.3	20	28.5	102.9

\*\* - Recovery outside control limits; data used. No mercury present in sample.

Date Analyzed: 11/25/92

## Abbreviations Summary

### General Reporting Abbreviations:

- B Blank - Indicates that the compound was found in both the sample and the blank. The sample value is reported without blank subtraction. If the sample value is less than 10X the blank value times the sample dilution factor, the compound may be present as a laboratory contaminant.
- D Indicates that the sample was diluted, and consequently the surrogates were too dilute to accurately measure.
- DL Detection Limit - Is the minimum value which we believe can be detected in the sample with a high degree of confidence, taking into account dilution factors and interferences. The reported detection limits are equal to or greater than Method Detection Limits (MDL) to allow for day to day and instrument to instrument variations in sensitivity.
- J Indicates that the value is an estimate.
- ND Not Detected - Indicates that the compound was not found in the sample at or above the detection limit.
- ppm parts per million (billion) in liquids is usually equivalent to mg/l (ug/l), or in solids to mg/kg (ug/kg). In the gas phase it is equivalent to ul/l (ul/m<sup>3</sup>).
- TR Trace - Indicates that the compound was observed at a value less than our normal reported Detection Limit (DL), but we feel its presence may be important to you. These values are subject to large errors and low degrees of confidence.

kg kilogram	mg milligram	l liter	m meter
g gram	ug microgram	ul microliter	

### QC Abbreviations:

- Control Control Limits are determined from historical data for a QC parameter. The test value must be within this acceptable range for the test to be considered in control. Usually this range corresponds to the 99% confidence interval for the historical data.
- % Error Percent Error - This is a measure of accuracy based on the analysis of a Laboratory Control Standard (LCS). An LCS is a reference sample of known value such as an NIST Standard Reference Material (SRM). The % Error is expressed in percent as the difference between the known value and the experimental value, divided by the known value. The LCS may simply be a solution based standard which confirms calibration (ICV or CCV - initial or continuing calibration verification), or it may be a reference sample taken through preparation and analysis.

## **Woodward-Clyde Consultants**

**SHIPMENT NO.:** \_\_\_\_\_

## **CHAIN OF CUSTODY RECORD**

PAGE        OF

PROJECT NAME: Weber

DATE // 124192

PROJECT NO.: 904W380C

DATE // 124192

Total Number of Samples Shipped:

**Sampler's Signature:**

Relinquished By: R. eden  
Signature \_\_\_\_\_  
Printed Name ANDY EDEN  
Company WOODWARD CLYDE  
Reason ANALYSIS

Received By: D. Martin  
Signature: D. Martin  
Printed Name: D. Martin  
Company: WCAK #22882

**Relinquished By:**  
Signature \_\_\_\_\_  
Printed Name \_\_\_\_\_  
Company \_\_\_\_\_  
Reason \_\_\_\_\_

**Received By:**  
Signature \_\_\_\_\_  
**Printed Name** \_\_\_\_\_  
**Company** \_\_\_\_\_

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**Printed Name:** \_\_\_\_\_  
**Company:** \_\_\_\_\_  
**Reason:** \_\_\_\_\_

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**Company** \_\_\_\_\_

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Company \_\_\_\_\_  
Reason \_\_\_\_\_

**Received By:**  
Signature \_\_\_\_\_  
**Printed Name** \_\_\_\_\_  
**Company** \_\_\_\_\_

**Special Shipment / Handling / Storage Requirements:**

## Caste characterization

\* Note – This does not constitute authorization to proceed with analysis